In the claims:

Please cancel claims 1-19 without prejudice. Please add new claims 23-34 as follows.

Claims 1-19 (Canceled)

Claim 20 (Previously presented)

A screening method for a gene regulating the differentiation from stem cells into natural killer cells comprising the following steps:

1) Synthesizing cDNA after separating whole RNA from stem cells or cells from stage of cell differentiation;

2) Separating tag after digesting the cDNA of the step 1;

3) Connecting each tag separated in the step 2 and then analyzing nucleotide sequence thereof; and

4) Quantifying the expression of the gene, based on the analyzed nucleotide sequence above, by using SAGE (Serial Analysis of Gene expression) analyzing program.

Claim 21 (Previously Presented)

A screening method for a gene regulating the differentiation from stem cells into natural killer cells as set forth in claim 20, which further comprises clustering SAGE data obtained from the step 4 by computer clustering program with expression pattern.

Claim 22 (Previously Presented)

A screening method for a gene regulating the differentiation from stem cells into natural killer cells as set forth in claim 20, wherein the stem cells or cells from stage of cell

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differentiation are HSCs(haematopoietic stem cell), pNK cells (precursor natural killer cells)

and mNK cells(mature natural killer cells).

Claim 23 (New)

A method of differentiating a stem cell into a natural killer cell, comprising treating to

stem cells, an effective amount of one or more genes selected from a group containing of

homeobox protein MIX (AF15457), pre-pro-proteinase 3 (U97073), myeloblastosis (Myb)

oncogene (M16499), keratin complex 1, acidic, gene 13 (NM_010662), PA-phosphatase

related phosphoesterase (AK002966), gamma-parvin (BC011200), forkhead-related

transcription factor 1C (AF330105), RIKEN cDNA 5730501N20 gene (AK017744), c-myc

protein (X010223), ribosomal protein L10A (AK002613), Oct 2b gene (X53654), microlite

(AK015601), dihydrolipoamide dihydrogenase (BC003368), tracle (U81030), lysozyme

(BC002069), ferritin H chain (BC012314), brevican (X87096), matrix metalloproteinase 12

(BC019135), EIA-stimulated gene cellular inhibitor (AF084524), S100 calcium binding

protein A9 (BC027635), MPS1 protein (L20315), transglutaminase 2 (BC016492), serum and

glucocorticoid regulated protein kinase (AF139639), RIKEN cDNA 5830413L19 (BC027496),

interferon-induced protein (BC003804), milk fat globul membrane protein EGF factor 8

(BC018577), cell-surface glycoprotein p91 (U83172), arginase 1 (BC050005), tumor necrosis

factor receptor 1 (M59378), retinoid-induced serine carboxypeptidase (AF330052), FLJ11000

homologue (BC023802), interleukin-18 binding protein d precursor (AF110803), chloride

channel 7 (AK009435), CD36 antigen (BC010262), zink finger protein homologue

(BC030186), carbohydrate binding protein 35 (J03723), C-type calcium dependent

carbohydrate (BC003218), lipoprotein lipase (NM_008509), v-maf lacertus fibrosarcoma

oncogene (BC038256), interleukin 7 receptor (NM_008372), chemokine (C-C) receptor 1 (BC011092), neurophilline (MGD|MGI:106206) (AK002673), SERPINA3G (XM_127137), GABA-A receptor subunit 6 (X51986), LAPTm5 (U51239), G-protein signal regulator (BC049968), decoy-stimulating factor GPI fixed mRNA (L41366), Y box protein 3 (AK019465), osteopontin precursor (J04806), amyloid beta (A4) precursor protein-binding family (AK021331), T cell receptor beta subunit analogue (U63547), immune related nucleotide 1 (BC005577), higher stage transcription factor 1 (NM_009480), olfactory receptor MOR267-7 (NM_146714), lymphocyte specific protein tyrosine kinase (M12056), osteoclast cancer inhibitor (AB013898), platelet active receptor homologue (BC024054), natural killer cell protein 2-A1 (AF016008), unidentified protein MGC36662 (BC023851), semaphorin 6A precursor homologue (AK004390), neurofilament homologue polypeptide (BC025872), cornin homologue actin binding protein 2A (BC026634), solute transmitting family 6 (BC015245), temporary purine receptor P2Y10 homologue (AK020001), T cell receptor gamma chain (X03802), poly A polymerase alpha (NM_011112), OPA-related protein OIP5 analogue (AK017825) and mytogen activated protein kinase 1 analogue (BC006708).

Claim 24 (New)

A method of treating a cancer comprising administering to a patient in need of such treatment or prevention, an effective amount of one or more genes selected from a group containing of homeobox protein MIX (AF15457), pre-pro-proteinase 3 (U97073), myeloblastosis (Myb) oncogene (M16499), keratin complex 1, acidic, gene 13 (NM_010662), PA-phosphatase related phosphoesterase (AK002966), gamma-parvin (BC011200), forkhead-related transcription factor 1C (AF330105), RIKEN cDNA 5730501N20 gene (AK017744),

c-myc protein (X010223), ribosomal protein L10A (AK002613), Oct 2b gene (X53654), microlite (AK015601), dihydrolipoamide dihydrogenase (BC003368), tracle (U81030), lysozyme (BC002069), ferritin H chain (BC012314), brevican (X87096), matrix metalloproteinase 12 (BC019135), EIA-stimulated gene cellular inhibitor (AF084524), S100 calcium binding protein A9 (BC027635), MPS1 protein (L20315), transglutaminase 2 (BC016492), serum and glucocorticoid regulated protein kinase (AF139639), RIKEN cDNA 5830413L19 (BC027496), interferon-induced protein (BC003804), milk fat globul membrane protein EGF factor 8 (BC018577), cell-surface glycoprotein p91 (U83172), arginase 1 (BC050005), tumor necrosis factor receptor 1 (M59378), retinoid-induced serine carboxypeptidase (AF330052), FLJ11000 homologue (BC023802), interleukin-18 binding protein d precursor (AF110803), chloride channel 7 (AK009435), CD36 antigen (BC010262), zink finger protein homologue (BC030186), carbohydrate binding protein 35 (J03723), C-type calcium dependent carbohydrate (BC003218), lipoprotein lipase (NM_008509), v-maf lacertus fibrosarcoma oncogene (BC038256), interleukin 7 receptor (NM_008372), chemokine (C-C) receptor 1 (BC011092), neurophilline (MGD|MGI:106206) (AK002673), SERPINA3G (XM_127137), GABA-A receptor subunit 6 (X51986), LAPTm5 (U51239), G-protein signal regulator (BC049968), decoy-stimulating factor GPI fixed mRNA (L41366), Y box protein 3 (AK019465), osteopontin precursor (J04806), amyloid beta (A4) precursor protein-binding family (AK021331), T cell receptor beta subunit analogue (U63547), immune related nucleotide 1 (BC005577), higher stage transcription factor 1 (NM_009480), olfactory receptor MOR267-7 (NM_146714), lymphocyte specific protein tyrosine kinase (M12056), osteoclast cancer inhibitor (AB013898), platelet active receptor homologue (BC024054), natural killer cell protein 2-A1 (AF016008), unidentified protein MGC36662 (BC023851),

semaphorin 6A precursor homologue (AK004390), neurofilament homologue polypeptide (BC025872), cornin homologue actin binding protein 2A (BC026634), solute transmitting family 6 (BC015245), temporary purine receptor P2Y10 homologue (AK020001), T cell receptor gamma chain (X03802), poly A polymerase alpha (NM_011112), OPA-related protein OIP5 analogue (AK017825) and mytogen activated protein kinase 1 analogue (BC006708).

Claim 25 (New)

The method as set forth in claim 24, wherein the cancer is selected from a group consisting of breast cancer, melanoma and lung cancer.

Claim 26 (New)

A method of differentiating a stem cell into a premature natural killer cell, comprising treating to stem cells, an effective amount of one or more genes selected from a group containing of a group consisting of homeobox protein MIX (AF15457), pre-pro-proteinase 3 (U97073), myeloblastosis (Myb) oncogene (M16499), keratin complex 1, acidic, gene 13 (NM_010662), PA-phosphatase related phosphoesterase (AK002966), gamma-parvin (BC011200), forkhead-related transcription factor 1C (AF330105), RIKEN cDNA 5730501N20 gene (AK017744), c-myc protein (X010223), ribosomal protein L10A (AK002613), Oct 2b gene (X53654), microlite (AK015601), dihydrolipoamide dihydrogenase (BC003368) and tracle (U81030).

Claim 27 (New)

A method of treating a cancer comprising administering to a patient in need of such treatment or prevention, an effective amount of one or more genes selected from a group containing of homeobox protein MIX (AF15457), pre-pro-proteinase 3 (U97073), myeloblastosis (Myb) oncogene (M16499), keratin complex 1, acidic, gene 13 (NM_010662), PA-phosphatase related phosphoesterase (AK002966), gamma-parvin (BC011200), forkhead-related transcription factor 1C (AF330105), RIKEN cDNA 5730501N20 gene (AK017744), c-myc protein (X010223), ribosomal protein L10A (AK002613), Oct 2b gene (X53654), microlite (AK015601), dihydrolipoamide dihydrogenase (BC003368) and tracle (U81030).

Claim 28 (New)

The method as set forth in claim 27, wherein the cancer is selected from a group consisting of breast cancer, melanoma and lung cancer.

Claim 29 (New)

A method of differentiating a premature natural killer cell into a mature natural killer cell, comprising treating to premature natural killer cells, an effective amount of one or more genes selected from a group containing of lysozyme (BC002069), ferritin H chain (BC012314), brevican (X87096), matrix metalloproteinase 12 (BC019135), EIA-stimulated gene cellular inhibitor (AF084524), S100 calcium binding protein A9 (BC027635), MPS1 protein (L20315), transglutaminase 2 (BC016492), serum and glucocorticoid regulated protein kinase (AF139639), RIKEN cDNA 5830413L19 (BC027496), interferon-induced protein (BC003804), milk fat globul membrane protein EGF factor 8 (BC018577), cell-surface

glycoprotein p91 (U83172), arginase 1 (BC050005), tumor necrosis factor receptor 1 (M59378), retinoid-induced serine carboxypeptidase (AF330052), FLJ11000 homologue (BC023802), interleukin-18 binding protein d precursor (AF110803), chloride channel 7 (AK009435), CD36 antigen (BC010262), zink finger protein homologue (BC030186), carbohydrate binding protein 35 (J03723), C-type calcium dependent carbohydrate (BC003218), lipoprotein lipase (NM_008509), v-maf lacertus fibrosarcoma oncogene (BC038256), interleukin 7 receptor (NM_008372), chemokine (C-C) receptor 1 (BC011092) and neurophilline (MGD|MGI:106206).

Claim 30 (New)

A method of treating a cancer comprising administering to a patient in need of such treatment or prevention, an effective amount of one or more genes selected from a group containing of lysozyme (BC002069), ferritin H chain (BC012314), brevican (X87096), matrix metalloproteinase 12 (BC019135), EIA-stimulated gene cellular inhibitor (AF084524), S100 calcium binding protein A9 (BC027635), MPS1 protein (L20315), transglutaminase 2 (BC016492), serum and glucocorticoid regulated protein kinase (AF139639), RIKEN cDNA 5830413L19 (BC027496), interferon-induced protein (BC003804), milk fat globul membrane protein EGF factor 8 (BC018577), cell-surface glycoprotein p91 (U83172), arginase 1 (BC050005), tumor necrosis factor receptor 1 (M59378), retinoid-induced serine carboxypeptidase (AF330052), FLJ11000 homologue (BC023802), interleukin-18 binding protein d precursor (AF110803), chloride channel 7 (AK009435), CD36 antigen (BC010262), zink finger protein homologue (BC030186), carbohydrate binding protein 35 (J03723), C-type calcium dependent carbohydrate (BC003218), lipoprotein lipase (NM_008509), v-maf

lacertus fibrosarcoma oncogene (BC038256), interleukin 7 receptor (NM_008372), chemokine (C-C) receptor 1 (BC011092) and neurophilline (MGD|MGI:106206).

Claim 31 (New)

The method as set forth in claim 30, wherein the cancer is selected from a group consisting of breast cancer, melanoma and lung cancer.

Claim 32 (New)

A method of differentiating a mature natural killer cell, comprising treating to mature natural killer cells, an effective amount of one or more genes selected from a group containing of SERPINA3G (XM_127137), GABA-A receptor subunit 6 (X51986), LAPTm5 (U51239), G-protein signal regulator (BC049968), decoy-stimulating factor GPI fixed mRNA (L41366), Y box protein 3 (AK019465), osteopontin precursor (J04806), amyloid beta (A4) precursor protein-binding family (AK021331), T cell receptor beta subunit analogue (U63547), immune related nucleotide 1 (BC005577), higher stage transcription factor 1 (NM_009480), olfactory receptor MOR267-7 (NM_146714), lymphocyte specific protein tyrosine kinase (M12056), osteoclast cancer inhibitor (AB013898), platelet active receptor homologue (BC024054), natural killer cell protein 2-A1 (AF016008), unidentified protein MGC36662 (BC023851), semaphorin 6A precursor homologue (AK004390), neurofilament homologue polypeptide (BC025872), cornin homologue actin binding protein 2A (BC026634), solute transmitting family 6 (BC015245), temporary purine receptor P2Y10 homologue (AK020001), T cell receptor gamma chain (X03802), poly A polymerase alpha (NM_011112), OPA-related

protein OIP5 analogue (AK017825) and mytogen activated protein kinase 1 analogue (BC006708).

Claim 33 (New)

A method of treating a cancer comprising administering to a patient in need of such treatment or prevention, an effective amount of one or more genes selected from a group containing of SERPINA3G (XM_127137), GABA-A receptor subunit 6 (X51986), LAPTm5 (U51239), G-protein signal regulator (BC049968), decoy-stimulating factor GPI fixed mRNA (L41366), Y box protein 3 (AK019465), osteopontin precursor (J04806), amyloid beta (A4) precursor protein-binding family (AK021331), T cell receptor beta subunit analogue (U63547), immune related nucleotide 1 (BC005577), higher stage transcription factor 1 (NM_009480), olfactory receptor MOR267-7 (NM_146714), lymphocyte specific protein tyrosine kinase (M12056), osteoclast cancer inhibitor (AB013898), platelet active receptor homologue (BC024054), natural killer cell protein 2-A1 (AF016008), unidentified protein MGC36662 (BC023851), semaphorin 6A precursor homologue (AK004390), neurofilament homologue polypeptide (BC025872), cornin homologue actin binding protein 2A (BC026634), solute transmitting family 6 (BC015245), temporary purine receptor P2Y10 homologue (AK020001), T cell receptor gamma chain (X03802), poly A polymerase alpha (NM_011112), OPA-related protein OIP5 analogue (AK017825) and mytogen activated protein kinase 1 analogue (BC006708).

Claim 34 (New)

The method as set forth in claim 33, wherein the cancer is selected from a group consisting of breast cancer, melanoma and lung cancer.